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Magda Koc¹, *Regina Sierżantowicz², Lech Trochimowicz¹⁻³, Bożena Kirpsza², Piotr Szwedziński⁵, Michał Kucap⁵, Krystyna Lapuc-Seweryn³, Klaudiusz Nadolny^{4, 5}, Jerzy Robert Ladny⁴, Hady Razak Hady³

Evaluation of patients' knowledge about perioperative recommendations after bariatric procedures

Ocena poziomu wiedzy w zakresie zaleceń okołoperacyjnych wśród pacjentów poddawanych zabiegom bariatrycznym

¹Operating Block, Medical University of Białystok, Poland

²Department of Surgical Nursing, Medical University of Białystok, Poland

³1st Department of General and Endocrine Surgery, Medical University of Białystok, Poland

⁴Department Emergency Medicine and Disaster, Medical University of Białystok, Poland

⁵Voivodeship Rescue Service in Katowice, College of Strategic Planning in Dąbrowa Górnicza, Poland

Keywords

knowledge, perioperative period, bariatric procedures

Słowa kluczowe

poziom wiedzy, okres okołoperacyjny, zabiegi bariatryczne

Summary

Introduction. Bariatric procedures are an alternative in obese patients who do not respond to conventional methods of weight reduction. There are no analyzes in the literature regarding the influence of patients' knowledge on perioperative proceedings.

Aim. Assessment of the knowledge of patients undergoing bariatric procedures in the area of perioperative proceedings, following diet and recommended physical activity.

Material and methods. The research has been conducted randomly, among 100 patients qualified for bariatric procedures, using an anonymous questionnaire of own design, assessing the level of knowledge in the field of preparation for surgery and post-operative procedure. The analysis of medical documentation consisted of obtaining information about current or past diseases coexisting with obesity, the medicines the patient was taking and the assessment of basic life parameters. The consent of the bioethical committee Medical University of Białystok, as well as written consent from all the subject.

Results. BMI in examined group was on average 45.15 ± 6.11 . The examined patients assessed knowledge in the area of perioperative proceedings, group 41 (41%) considered that the level of knowledge is good. There were no statistically significant differences in the level of knowledge regarding perioperative proceedings, following the diet and physical activity in men and women. However, a statistically significant ($p < 0.05$) positive correlation ($r = 0.2197$) between the age of the patients and the level of their knowledge has been found. The sense of having more knowledge in the discussed area increased with age.

Conclusions. Preparation and implementation of an educational program including recommendations regarding among others preparation for the procedure, recommended diet, recommended physical activity, frequency of follow-up visits, prevention of post-operative complications among patients treated bariatrically would allow to complete knowledge and accelerate the process of weight reduction.

Streszczenie

Wstęp. Zabiegi bariatryczne stanowią alternatywę u chorych z otyłością, którzy nie reagują na konwencjonalne metody redukcji masy ciała. W literaturze brak analiz dotyczących wpływu poziomu wiedzy pacjentów na postępowanie okołoperacyjne.

Cel pracy. Ocena wiedzy pacjentów poddawanych zabiegom bariatrycznym w zakresie postępowania okołoperacyjnego, przestrzegania diety oraz zalecanej aktywności fizycznej.

Materiał i metody. Badania zostały przeprowadzone losowo wśród 100 pacjentów kwalifikowanych do zabiegów bariatrycznych, za pomocą anonimowego kwestionariusza ankietowego konstrukcji własnej, oceniającego poziom wiedzy w zakresie przygotowania do zabiegu i postępowania pooperacyjnego. Analiza dokumentacji medycznej polegała na uzyskaniu informacji o aktualnych lub przebytych chorobach współistniejących z otyłością, lekach, które pacjent przyjmował, oraz ocenie podstawowych parametrów życiowych. Uzyskano zgodę komisji bioetycznej Uniwersytetu Medycznego w Białymstoku oraz pisemne zgody pacjentów.

Conflict of interest

Konflikt interesów

None

Brak konfliktu interesów

Address/adres:

*Regina Sierżantowicz
Zakład Pielęgniarstwa Chirurgicznego
Uniwersytet Medyczny w Białymstoku
ul. Szpitalna 37, 15-295 Białystok
tel. +48 (85) 686-50-78
renatasierz@wp.pl

Wyniki. BMI w ankietowanej grupie wynosiło średnio $45,15 \pm 6,11$. Badani oceniali wiedzę w zakresie postępowania okołoperacyjnego, grupa 41 pacjentów (41%) uznała, że poziom wiedzy jest dobry. Nie stwierdzono istotnych statystycznie różnic w poziomie wiedzy w zakresie postępowania okołoperacyjnego, przestrzegania diety, aktywności fizycznej u mężczyzn i kobiet. Stwierdzono natomiast istotną statystycznie ($p < 0,05$) dodatnią korelację ($r = 0,2197$) między wiekiem chorych a poziomem ich wiedzy. Wraz z wiekiem wzrastało poczucie posiadania większej wiedzy w omawianym zakresie.

Wnioski. Przygotowanie i wdrożenie programu edukacyjnego w zakresie zaleceń dotyczących m.in. przygotowania się do zabiegu, zalecanej diety, zalecanej aktywności fizycznej, częstotliwości wizyt kontrolnych, zapobiegania powikłaniom pooperacyjnym wśród pacjentów leczonych bariatrycznie pozwoli uzupełnić wiedzę i przyspieszyć proces redukcji masy ciała.

INTRODUCTION

In 1991, the World Health Organization (WHO) classified obesity to systemic diseases, which is why the problem of obesity began to be perceived not only in psychological and social terms, but also in medical terms. The number of people with obesity in whom the body mass index (BMI) is $\geq 30 \text{ kg/m}^2$, in the years 2000-2005 has tripled, whereas with BMI ≥ 40 has doubled (1). In Poland, the current prevalence of overweight and obesity among the Polish population was 36.54 and 13.34%, respectively (<http://www.who.int/bmi>).

The main causes of obesity are genetic, physiological, psychological and environmental factors related to lifestyle (2). Obesity is the cause of many metabolic, endocrine, psychological disorders, lung ventilation, changes in the circulatory and osteoarticular systems, with the immediate life threat (risk of mechanical injury, more malignant course of infection, heart failure and respiration) and indirect risk resulting from obesity complications (type 2 diabetes, dyslipidemia, complications of hypertension and atherosclerosis, etc.) (3). Bariatric procedures are an alternative in obese patients who do not respond to conventional methods of weight reduction, such as compliance with a low-calorie diet and increased physical activity (4, 5). There are studies in the literature confirming the impact of diet (6), physical activity (7) on the effects of bariatric surgery and weight reduction. However, there are no studies on the impact of patients' level of knowledge on perioperative proceedings.

AIM

The aim of the study was to assess the knowledge of patients undergoing bariatric procedures in perioperative proceedings, following the diet and recommended physical activity.

MATERIAL AND METHODS

The research has been conducted randomly, among 100 patients qualified for bariatric procedures, using an anonymous questionnaire of own design, assessing the level of knowledge in the field of preparation for surgery and postoperative procedures in the 1st Department of General and Endocrinological Surgery, University Hospital in Białystok.

The analysis of medical documentation of patients undergoing bariatric procedures consisted in obtaining information about current or previous diseases coexisting with obesity, the medicines the patient was taking and the basic vital parameters (i.e. heart rate, blood pressure) of the patient, both, before and after the procedure. The questionnaire is built in two parts. Part I (personal information) consisted of 10 questions regarding the age of the respondents, gender, body weight, height, place of residence, and education. Part II contains proper questions, precisely related to the subject of the study. The respondents were informed about ensuring full anonymity and the need to self-solve the survey. The consent of the bioethical committee Medical University of Białystok, as well as written consent from all the subject.

Statistical analysis

The analysis of the results has been conducted using the statistical software STATISTICA for Windows 11.0. The results of the survey have been presented using descriptive statistics tables, tables of cardinality and charts. The relations of the results of self-assessment of the knowledge on the perioperative proceedings, following the diet and physical activity depending on the gender, have been analyzed by Mann Whitney's U test. The dependence of the results of the self-assessment of the knowledge in the discussed field on the age has been analyzed by estimating the Spearman rank correlation coefficients. The test probability has been assumed to be significant at $p < 0.05$ and test probability at $p < 0.01$ has been considered highly significant. The tests have been approved by the Bioethical Commission.

RESULTS

The study randomly included 100 patients qualified for bariatric surgery in the 1st Department of General and Endocrinological Surgery at the University Hospital in Białystok, aged from 25 to 56 ± 10.2 . The proportion of men and women in the research has been similar, slightly larger group of respondents (54%) were men. Most often bariatric procedures have been performed in the group of patients 41-45 years (35%) and 31-35 years (21%). The group of patients operated after the age of 50 was 8%. Among the co-morbidities

ties, hypertension was related to 64 (51.2%), diabetes 19 (15.2%), ischemic heart disease 13 (10.4%) of patients. 40% of patients had secondary education. Most often, the respondents decided to undergo surgery due to health problems (tab. 1).

Tab. 1. Characteristics of examined group

Characteristics of group	Number	Percent of response
Women/men	46/54	46/54
Age/years:		
– 25-30	10	10
– 31-35	21	21
– 36-40	17	17
– 41-45	35	35
– 46-50	9	9
– > 50	8	8
Education:		
– vocational	24	24
– secondary	40	40
– higher	36	36
The reason for undergoing the surgery:		
– family persuasion	20	20
– health issues	41	41
– negative estimation of one's own look	39	3
Co-morbidities:		
– hypertension	64	51.20
– diabetes	19	15.20
– ischemic heart disease	13	10.40
– schizophrenia	1	0.80
– cancer	1	0.80
– none	27	21.60

The average body mass in the examined group of patients was 133.3 ± 20.7 ; an increase of 1.72 ± 0.9 , while the BMI in the surveyed group was on average 45.15 ± 6.11 (fig. 1).

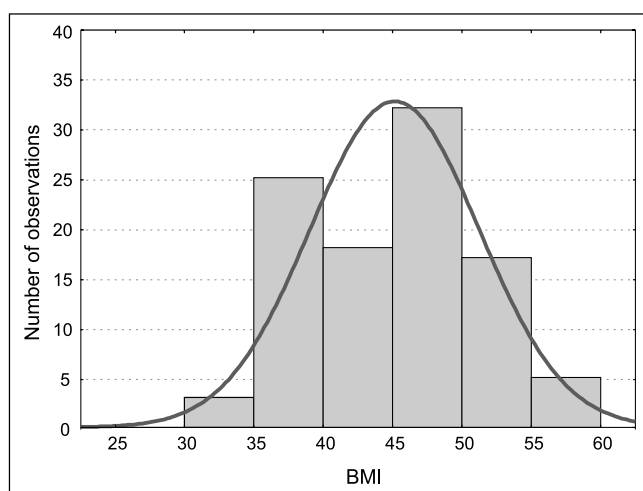


Fig. 1. BMI in examined group of patients

The most frequently performed surgical procedure in the examined group has been sleeve gastrectomy (51%), gastric banding has been applied in 34% of respondents, and the Roux-en-Y method has been used in 15% of the respondents (tab. 2).

Tab. 2. The type of bariatric procedure in examined group of patients

The type of bariatric procedure	Number	Percent
Laparoscopic adjustable gastric banding (LAGB)	34	34.00
Sleeve gastrectomy (SG)	51	51.00
Roux-en-Y gastric banding (RYGB)	15	15.00

The examined patients assessed the knowledge on perioperative proceedings. The most numerous group 41 (41%) considered that the level of knowledge is good (fig. 2).

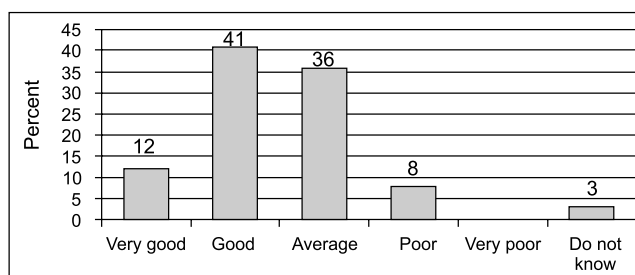


Fig. 2. Evaluation of the knowledge on perioperative proceedings in examined group of patients

Respondents most often found information about the nature of various bariatric operations 30 (30%), and 20 (20%) of the subjects received information about the procedure from the physician (fig. 3).

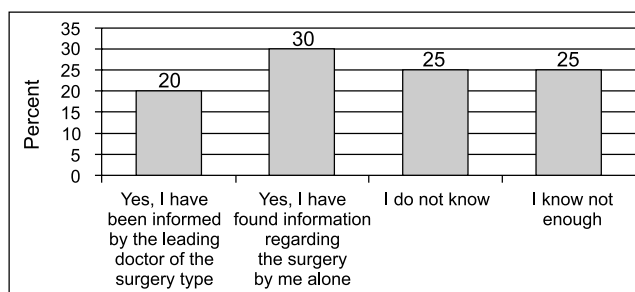


Fig. 3. Ways of acquiring information about the essence of bariatric operations

The information about the risk of surgery was individually searched in scientific publications/Internet by 27 (27%) respondents, and 25 (25%) declared that the physician informed them about the risks associated with the operation (fig. 4).

The physician informed 42 (42%) patients about proper method of preparation for surgery. Only 4% of the respondents sought information on the subject, while 33% of the respondents did not know the principles of proper preparation for the procedure (fig. 5).

Most of the respondents (87%) admitted that they do not know when they can eat after surgery. The 9% group believes that can eat after intestinal peristalsis returns (tab. 3).

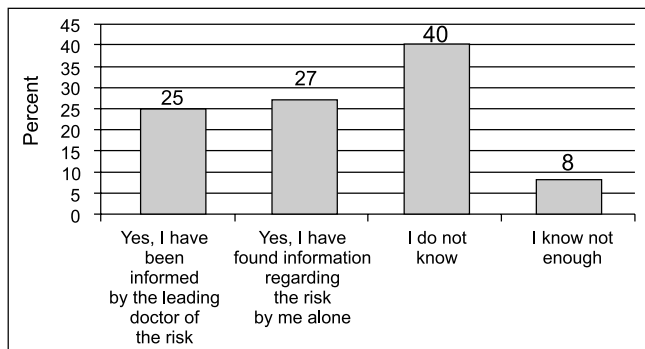


Fig. 4. Obtaining information on the risks associated with bariatric surgery

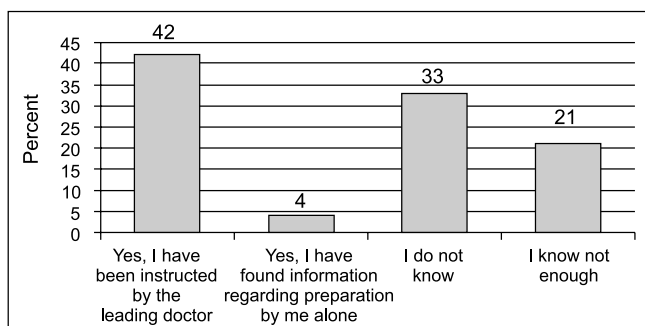


Fig. 5. Patients' knowledge regarding proper preparation for surgery

Tab. 3. Knowledge of patients regarding the time of eating meals after surgery

Do you know when you can eat after the surgery?	Number	Percent
Yes, a day after the surgery	4	4.00
Yes, when intestinal peristalsis returns	9	9.00
I do not know	87	87.00

Group of 33 (33%) patients was convinced that rehabilitation after surgery should be started one day after surgery, 26 (26%) patients did not have knowledge in this field, while 21 (26%) patients indicated that as soon as possible after the surgery (tab. 4).

Tab. 4. Patient knowledge regarding the time to start rehabilitation after surgery

Do you know when you should start rehabilitation after the surgery?	Number	Percent
Yes, a day after the surgery	33	33.00
Yes, as soon as possible	21	21.00
After operations wound healing	9	9.00
After discharge from hospital	11	11.00
I do not know	26	26.00

The vast majority of examined patients (87%) have not been informed when they should come for follow-up visits after discharge from the hospital, and 72 (72%) did not know the frequency of follow-up visits later in the post-operative period (tab. 5).

Examined patients confirmed that in almost every worrying case they would report to the doctor, but

Tab. 5. Knowledge of patients regarding post-operative follow-up visits

How frequently you should come for follow-up visits after the surgery?	Number	Percent
Yes, I know, once a month	13	13.00
I do not know	87	87.00
How frequently you should come for follow-up visits in later post-operative period?	Number	Percent
Yes, I know, once a month	4	4.00
Yes, I know, once every 6 months	4	4.00
Yes, I know, once a year	20	20.00
I do not know	72	72.00

most often it was indicated that “when the wound on the stomach begins to bleed, hurt, suppurate” – 90 (90%), “when abdominal pain occurs” – 80 (80%), and “when bloody diarrhea/constipation occurs” – 80 (80%) (tab. 6).

Tab. 6. Knowledge of patients about situations requiring medical consultation

What cases you should immediately report to your physician?	Number	Response percent	Cases percent
When feler occurs	43	11.65	43.00
When stomach ache occurs	80	21.68	80.00
When nausea and emesis occur	76	20.60	76.00
When bloody diarrhea/constipation occurs	80	21.68	80.00
When the wound on the stomach begins to bleed, hurt, suppurate	90	24.39	90.00

After analyzing study results, there were no statistically significant differences in the level of knowledge in perioperative proceedings, diet and physical activity in men and women. However, a statistically significant ($p < 0.05$) positive correlation ($r = 0.2197$) between the age of the patients and the level of their knowledge has been found. With age, the sense of having more knowledge in the discussed area increased (fig. 6 and 7).

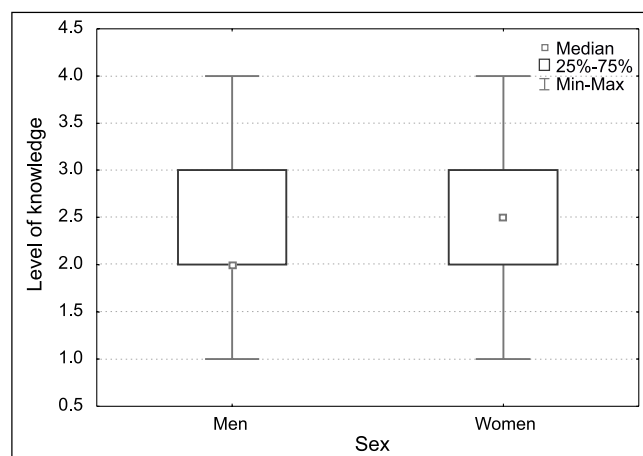


Fig. 6. Evaluation of knowledge in examined group of men and women *Mann-Whitney U Test

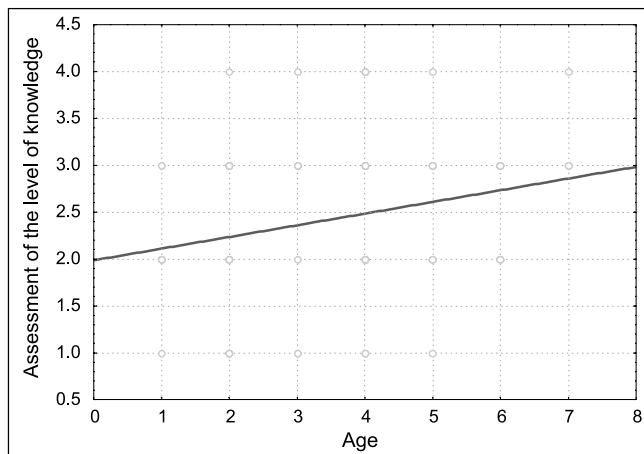


Fig. 7. Correlation between result and the evaluation of knowledge in examined group

*Spearman range correlation factor

DISCUSSION

Despite many ways of defining obesity (1-3), the authors agree that it is a civilization, social and the most frequent systemic disease and its incidence increases every year. Obesity is often related to people with low incomes, low educated, living in rural rather than urban areas (8). In the results of this study, 40% of respondents had secondary education and 20 (20%) vocational.

The psychophysical issues of obese people do not apply to all overweight people to the same extent. Obesity carries a risk of complications, sometimes contributing to the deterioration of the prognosis as to the length of life. Coronary heart disease, heart failure, hypertension, diabetes, hyperlipidemia, cholelithiasis, rheumatic diseases, respiratory failure and some cancers often coexist, but the incidence of these diseases depends on age and other additional risk factors, including the distribution and amount of adipose tissue (3). Regarding the examined patients, the most common reasons for decision about surgery were increasing health problems (41%), and the most common disorder associated with obesity was hypertension (64%).

Treatment of an obese patient must be individually adapted to age, gender, severity and type of obesity, metabolic risk factors and co-morbidities, and patients themselves must understand that obesity is a chronic disease and requires systematic post-operative control. Therefore, the treatment of obesity includes dietary recommendations, increased physical activity, lifestyle modification, pharmacotherapy and surgical treatment (9, 10). Currently, bariatric procedures are characterized by a relatively small percentage of complications, they are becoming safer and more effective. Bariatric surgery is gradually becoming an alternative to conservative treatment of obesity (11). In the study group, the most frequently performed surgical procedure (51%) was sleeve gastrectomy, gastric banding has been applied in 34% of the subjects, and the

Roux-en-Y method has been used in 15% of the subjects. The respondents most often found information about the bariatric surgery themselves (30%), and 20% of the subjects received information about the procedure from the physician.

The indication for surgical treatment of obesity, its according to BMI > 40 or > 35, which is accompanied by other diseases resulting from obesity (i.e. diabetes, hypertension, dyslipidemia, osteoarticular diseases, sleep apnea, impotence or hormonal disorders), adults aged under 60 are qualified for the surgery, and each case is considered individually. In our studies, the bariatric procedure was most often performed in a group of 35 patients (35%) aged 41-45.

Many authors (4, 12, 13) agree that pre-operative care is an important determinant of the success of surgery. Preparation for the surgical treatment of obesity should consist of a precise understanding of the risk of complications and diagnosis and treatment in case of their occurrence (11). The analysis of the results of the study indicated that the most frequently examined patients (42%) were informed about the correct method of preparation for surgery. 4% of patients sought information on this subject themselves, while 33% of respondents said they did not know how to prepare for the procedure. Informing about both, risk and positive effects of planned treatment reduces tension and stress, which improves the emotional state of the patient and satisfaction from the contact with the treatment team.

The most common complications of early and late surgical treatment of obesity, by Głuszek (14) are, for example, cardiac arrest following apnea, atelectasis, pulmonary embolism, intestinal anastomotic leakage, bleeding, patency and internal hernia, gastric distension, gastrointestinal stenosis, postoperative hernia, protein-calorie malnutrition, and in the case of restrictive-disabling procedures for anastomotic leakage. With regard to the results of our research, information on the risk of operations was individually sought in research articles and Internet by 27% of respondents, and 25% of respondents declared that the physician informed them about the risks associated with the operation.

Proper postoperative proceedings after bariatric procedures is very complex. The most important period after bariatric surgery is the first day, because the risk of leakage of the anastomosis that may endanger the patient's life, is then the highest. It is extremely important to apply immediate rehabilitation proceedings, a few hours after surgery would be the best period, and nutrition of patients in uncomplicated surgery, should be oral (15).

According to Foundation for the Development of Laparoscopic and Bariatric Surgery, all elements of conservative treatment are valid after surgery, among others increased physical activity, psychological support including support group, diet and regular control in a bariatric outpatients clinic. Regarding examined patients, 33 (33%) stated that postoperative rehabilitation

should be started one day after surgery. Most of the patients also declared that in any worrying case they would report to their physician.

CONCLUSIONS

1. Patient knowledge in the area of perioperative proceedings, following the diet, possible post-operative complications and recommended physical activity was insufficient.

2. Preparation and implementation of an educational program regarding recommendations regarding among others preparation for the procedure, recommended diet, recommended physical activity, frequency of follow-up visits, prevention of post-operative complications among patients treated bariatrically would allow to complete knowledge and accelerate the process of weight reduction.

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